CLAIMS

1. A transmission device comprising:

a modulator for modulating data by a plurality of modulation methods; and

a transmitter for transmitting a radio signal by using a plurality of carrier frequencies,

wherein the transmission device transmits the data by changing a transmission communication method to another method following a lapse of time, which transmission communication method is formed by combining one of the modulation methods and one of the carrier frequencies.

2. The transmission device of claim 1 further comprising a switcher of a transmission method, wherein at least one of the modulator or the transmitter is available in plural pieces, and the switcher switches the plural modulators or transmitters for switching the transmission communication method.

3. The transmission device of claim 1, wherein the device transmits the data repeatedly without changing the transmission communication method during a period in which another device is supposed to complete switching a reception communication method to another method corresponding to the transmission communication method to receive the data, which another method is formed by combining one of the modulation methods and one of the carrier frequencies.

4. The transmission device of claim 1 further comprising:

a transmission communication method notifying section for

notifying another device of a communication method desirable to be used on the transmission side; and

a communication receivable method reply receiver for receiving a reply whether or not to receive the data by the communication method notified,

wherein the transmission device transmits data thereafter by the communication method accepted by the another device to this another device.

5. The transmission device of claim 1 further comprising a data divider for dividing data into a plurality of pieces of data and putting each one of those plurality of pieces of the data a number to identify an order of each piece of the data in original data, wherein the lapse of time indicates a lapse based on information about the order.

6. The transmission device of claim 5 further comprising a re-transmission request receiver for receiving a request of re-transmitting a missing piece of the data from another device, wherein the transmission device re-transmits the missing part of the divided data based on the request.

7. The transmission device of claim 6, wherein the transmission device receives, at the re-transmission request receiver, information about a reception communication method available in the another device together with the re-transmission request, then the transmission device re-transmits the missing piece of the data requested re-transmission by an available communication method among the transmission communication methods corresponding to the communication methods available on the reception side, and when the transmission device receives an acknowledgement from the another device of the missing piece of the data re-transmitted based on the request, the

transmission communication method used for successful re-transmission of the missing piece of divided data can be used for transmitting pieces of divided data thereafter.

8. The transmission device of claim 1 further comprising:

a demodulator for demodulating data by a plurality of demodulation methods; and

a receiver for receiving a radio signal with a plurality of carrier frequencies,

wherein the transmission device receives data by changing a reception communication method following a lapse of time, which communication method is formed by combining one of the plurality of demodulation methods and one of the plurality of carrier frequencies, then

wherein the transmitter transmits the data together with information about a reception communication method desirable to be changed, then

wherein the receiver waits and receives information to be transmitted from another device by a communication method corresponding to the communication method desirable to be changed.

9. The transmission device of claim 8, wherein the information showing the communication method desirable to be changed is encrypted.

10. The transmission device of claim 9 including an identifying mark for identify the transmission device, wherein the identifying mark is used as a part of a key for the encryption.

11. A reception device comprising:

a demodulator for demodulating data by a plurality of demodulation methods; and

a receiver for receiving a radio signal with a plurality of carrier frequencies

wherein the reception device receives the data by changing a reception communication method following a lapse of time, which communication method is formed by combining one of the plurality of demodulation methods and one of the plurality of carrier frequencies.

12. The reception device of claim 11 further comprising a switcher of a transmission method, wherein at least one of the demodulator or the receiver is available in plural pieces, and the switcher switches the plural demodulators or receivers for switching the reception communication method.

13. The reception device of claim 11 further comprising:

a transmission communication method receiver for receiving a transmission communication method notified, as a desirable method to be used, by another device that has transmitted the data;

a communication receivable method selector for selecting a communication receivable method from among transmission side methods received at the transmission communication method receiver and desirable to be used; and

a communication receivable method replying section for informing the another device of a communication receivable method selected by the communication receivable method selector.

14. The reception device of claim 13, wherein the reception device divides original data into a plurality of pieces of data, puts information about an order in the original data to each one of the plurality of pieces of data, and changes a combination of a modulation method and a carrier frequency following a lapse of time in response to every piece of data for transmission, then receives each piece of data transmitted at the receiver,

wherein the reception device includes a data restoring section for restoring each piece of data received at the receiver into the original data based on the information about an order.

15. The receiver of claim 14, wherein the receiver judges which piece of data is missing based on the information about an order denoted to each piece of data, wherein the receiver includes a re-transmission request transmitter for requesting re-transmission of the missing piece of data.

16. The reception device of claim 15, wherein when the reception device fails in receiving the missing piece of data after the request of re-transmission, the re-transmission request transmitter requests re-transmitting the missing piece of data by a transmission communication method corresponding to another reception communication receivable method.

17. The reception device of claim 16 further comprising an acknowledgement transmitter for transmitting an acknowledgement together with information about a reception communication method successfully receiving the missing piece of data requested re-transmission.

18. The reception device of claim 11 further comprising:

a modulator for modulating data by a plurality of modulation methods; and

a transmitter for transmitting a radio signal with a plurality of carrier frequencies,

wherein when the receiver receives the data together with information about a reception communication method desired by another device to change, the transmitter transmits data by switching a transmission communication method, which method is formed by combining one of the plurality of modulation methods and one of the plurality of carrier frequencies, to a method corresponding to the reception communication method desired to change.

19. The reception device of claim 18, wherein the information about the reception communication method desired to change is encrypted.

20. The reception device of claim 19 including an identifying mark for identify the another device, wherein the identifying mark is used as a part of a key for the encryption.

21. A transmission device comprising:

a modulator for modulating data by a plurality of modulation methods; and

a transmitter for transmitting a radio signal by using a plurality of carrier frequencies,

wherein the transmission device transmits simultaneously the data with different carrier frequencies by a plurality of communication methods, each one of which methods is formed by combining one of the modulation methods

and one of the carrier frequencies.

22. The transmission device of claim 21 further comprising:

a transmission communication method notifying section for notifying another device of a transmission communication method desired to be used ; and

a receivable communication method reply receiver for receiving a reply from the another device about whether or not data can be received by the transmission communication method notified,

wherein the transmission device transmits data thereafter to the another device by the transmission communication method according to the reply received at the reply receiver from the another device.

23. The transmission device of claim 21 further comprising a data divider for dividing the data into a plurality of pieces of data and puts information about an order in the data to each piece of the data, wherein the transmission device transmits the plurality of pieces of the data having the information about an order respectively by the plurality of transmission communication methods to another device.

24. The transmission device of claim 23 further comprising a re-transmission request receiver for receiving a request of re-transmitting a missing piece of the data from the another device, wherein the transmission device re-transmits the missing piece of the data based on the request of re-transmission received at the re-transmission request receiver.

25. The transmission device of claim 24, wherein the transmission

device receives, at the re-transmission request receiver, information about a receiver communication method available in the another device together with the re-transmission request, then the transmission device re-transmits the missing piece of the data requested re-transmission by an available communication method among the transmission communication methods corresponding to the reception communication methods available, and when the transmission device receives an acknowledgement from the another device of the missing piece of data re-transmitted based on the request, the transmission communication method used for successful re-transmission of the missing piece of data can be used thereafter for transmitting a piece of data.

26. The transmission device of claim 21 further comprising a change notifying section for notifying the another device, by one of the transmission communication methods, of a change request of the plurality of the transmission communication methods to other methods together with a transmission communication method to be used after the change.

27. The transmission device of claim 26, wherein after the change notifying section notifies the another device of the change request together with the transmission communication method to be used after the change, data transmitted by at least one of the communication methods except the method to be used after the change are invalid data not necessarily to be transmitted to the another device.

28. A reception device comprising:

a demodulator for demodulating data by a plurality of demodulation methods; and

a receiver for receiving a radio signal with a plurality of carrier frequencies

wherein the reception device receives data transmitted simultaneously with different carrier frequencies by a plurality of transmission communication methods formed by combining one of the demodulation methods and one of the carrier frequencies, wherein the data are received by reception communication methods corresponding to the transmission communication methods.

29. The reception device of claim 28 further comprising:

a transmission communication method receiver for receiving a transmission communication method desired to be used and notified from another device that has transmitted the data;

a receivable communication method selector for selecting a communication receivable method from among the transmission communication methods desired to be used and received at the method receiver; and

a receivable communication method replying section for replying the method selected by the method selector to the another device.

30. The reception device of claim 28, wherein the reception device divides original data into pieces of data and puts each piece of the data information about an order in the original data, and receives at the receiver each piece of the data having the information about an order and transmitted by changing a combination of a modulation method and a carrier frequency in response to each piece of data, wherein the reception device further includes a data restoring section for restoring each piece of the data into the original data based on the information about an order.

31. The reception device of claim 30 further comprising a re-transmission request transmitter for finding a missing piece of data based on the information about an order put to each piece of the data, and for requesting a re-transmission of the missing piece of the data.

32. The reception device of claim 31, wherein when the reception device fails in receiving the missing piece of the data after the request, the re-transmission request transmitter transmits reception communication methods available together with the retransmission request.

33. The reception device of claim 32 further comprising an acknowledgement transmitter for transmitting an acknowledgement of the missing piece of the data together with information about a reception communication method used when the reception device successfully receives the missing piece of the data.

34. The reception device of claim 28 further comprising a change notice receiver for receiving a request of changing the plurality of the transmission communication methods to other transmission side methods together with a transmission communication method to be used after the change, wherein the transmission device receives the data based on the change request received at the change notice receiver and the transmission communication method to be used after the change.

35. The reception device of claim 34, wherein when the change notice receiver receives the change request together with the transmission

communication method to be used after the change, then the receiver disposes of data transmitted by one of the transmission communication methods as invalid data not necessarily to receive.